SCPP

The SCPP is a circumferential piston pump designed for transporting very low viscosity products in applications that require medium to high discharge pressures. The piston design offers low shear with low pulsation and minimizes damage to product and bruising of solids.

Two SCPP ranges are available: the SCPP1 specifically designed for quick and easy strip-clean type processes and the SCPP2 where CIP (cleaning-in-place) may be utilized.

This complete portfolio of positive pumps enables Alfa Laval to offer the most effective solution, whatever the application.

Motorization

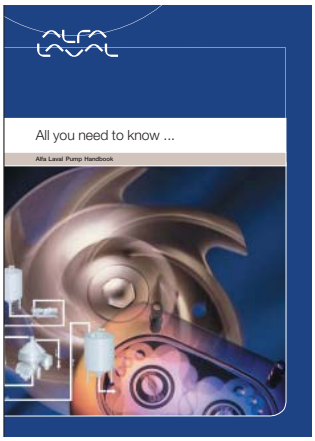
Pumps can be supplied as bareshaft for mounting locally in the process line or within a skid. Alternatively, Alfa Laval offers the units fully motorized using robust, reliable and efficient geared drives, which can be designed for direct drive or for speed control.

The rigid base plate ensures accurate alignment of the pump and drive and is available in stainless steel for hygienic environments or painted carbon steel for industrial applications.

Other options include ball feet for raising the unit above the fl oor level to provide access for cleaning and stainless steel shrouds to protect the drive against dirt entrapment and enable easy wash down.

Everything you need

To tailor pump solutions to individual customer requirements, Alfa Laval has a comprehensive package of effective tools and software programs that help our partners size and confi gure the right pumps for any given installation – quickly and efficiently.



The Alfa Laval pump handbook.

All you need to know

The Alfa Laval pump handbook is a comprehensive reference guide to support pump users at all levels. It includes all the necessary information for the correct selection and successful application of the Alfa Laval range of pumps.

Computer-Aided Selection (CAS) software.

Computer-Aided Selection software

Alfa Laval Computer-Aided Selection (CAS) software helps quickly and easily size hygienic pump installations and identify the pump confi guration optimized to your specifi c process require ments. CAS also includes article numbers and spare parts lists, which makes it easy to compile order lists and streamline mainte nance and service procedures. This unique Alfa Laval tool can also help to estimate service costs to assist in budget planning.

Rheology laboratory

Our laboratory provides us with a thorough understanding of individual fl uid behaviour, which contributes to the correct sizing of pumps, seal specifi cation as well as optimizing system design. This ensures the selection of the right pump the fi rst time, which potentially reduces both capital investment and life cycle costs.

CAD portal

The Alfa Laval CAD portal offers access to 2D and 3D CAD drawings in a variety of formats, providing ease of design and installation.

Maintenance videos.

Animations and maintenance videos

Effective short animations provide a general overview of the products and a greater understanding of its characteristics and capabilities. In addition, Alfa Laval maintenance videos detail the procedures of timely and effective maintenance to keep processes running effi ciently and achieve low life cycle costs.

Comprehensive documentation

We provide you and your suppliers with full documentation and comprehensive installation and maintenance instructions in multiple languages. This makes it easier to keep to installation and maintenance schedules, helps cut operating and maintenance costs and increases plant running time.

Comprehensive documentation in multiple languages.

Q-doc

All Alfa Laval UltraPure products can be supplied with Q-doc, a comprehensive documentation package based on GDP (Good Documentation Practices). Q-doc comprises equipment manuals, quality and manufacturing procedures, relevant material certifi cates and necessary parts and service information for standard components. The Q-doc docu mentation package supports a smooth qualification and validation process.

Q-doc.

Certifi cation and compliance

Alfa Laval pumps generally comply with the latest international standards and legislation to ensure total process safety and the highest quality product. This includes, but is not limited to, the highest standards and requirements in the industry such as the CE machinery directive, 3-A, EHEDG, FDA and ATEX as well as EU Regulation 1935/2004, Article 17 (traceability).

Close at Hand

To make selection of Alfa Laval products easy, there is a comprehensive over 1400-page catalogue entitled “Close at Hand”, which includes detailed information on the world’s broadest portfolio of hygienic components and provides convenient one-stop shopping.

Close at Hand catalogue.

For more info and access to tools and software

www.alfalaval.com/biopharm
www.alfalaval.com/food
www.alfalaval.com/high

Handling your hygienic processing needs

Optimizing the performance of hygienic processes is a challenge best met with expertise. Alfa Laval expertise is the result of years of accumulated knowledge and a comprehensive research and development programme.

With this foundation, we work closely with our channel partners to help companies extract the most value from raw materials, minimize waste and emissions, and deliver safe and hygienic products. Ultimately, our ambition is to help companies supply quality products to consumers at competitive prices.

Alfa Laval has served as the standard bearer for the production of hygienic products since Gustaf de Laval invented the centrifugal separator to separate cream from milk more than a century ago. That same ingenuity is applied to all our hygienic components and solutions that safeguard the flavour, texture and appearance of food, dairy products, beer and other beverages.

For the pharmaceutical, biopharm and personal care industries, our contributions not only entail hygienic design and superior performance but comprehensive documentation and solutions that are easy to validate. Which in turn raise the quality, cleanliness and uniformity of the final products.

Safeguarding hygienic applications requires entrusting your processes to the safe, competent care of a reliable partner. With Alfa Laval you are in good hands.

Working locally on a global scale

Alfa Laval brings you the advantages of a worldwide organization supported by a strong network of 1,500 partners around the globe. This gives you a one-stop shop for everything, including quality parts and unmatched service expertise.

Trustworthy service
Guaranteed performance, reliability and hygiene come standard with every Alfa Laval pump. Each pump is backed by the service and support from our global organization and local network of distributors, system builders and contractors. This gives you easy access to advanced resources and specialist knowledge about hygienic components and processes.

Investing in quality parts
There are no short cuts to quality, especially when the integrity of hygienic processes is at stake. That is why investing in Alfa Laval hygienic components and solutions ultimately pays off.

Alfa Laval parts are precision-made to ensure optimal performance. Rigorous testing in our materials laboratory under actual operating conditions ensures that each part will uphold safety, efficiency and hygiene of your processes for the long term.

Unsurpassed reliability
It goes without saying that an investment in quality is an investment in reliability. Alfa Laval hygienic components and solutions are designed and sized right from the start. When reinforced by maintenance programmes and Alfa Laval parts, you are able to achieve a strong total cost of ownership and true peace of mind.

	Centrifugal Pumps											Liquid-Ring Pumps		Rotary Lobe Pumps		
	LKH	LKHI	LKH Multi-stage	LKHPF	LKH -SP	LKH-UP	LKH evap	SolidC	SolidC UP	GM	FM-OS	MR	MR UP	Opti-Lobe	SRU	SX
Main duties																
Dairy																
Milk	•		•					•		•	•					
Milk/cream pasteurization	•		•				•	•		•	•			•	•	•
Cultured milk	•		•											•	•	•
Whey	•		•	•			•							•	•	•
Curd														•	•	•
Ice cream pasteurization	•	•	•							•	•					
Cheese														•	•	•
Yoghurt														•	•	•
High pressure filtration			•	•												
Brewery																
Wort	•		•					•		•	•			•	•	
Beer	•		•					•		•	•			•	•	
Beer pasterization - feed	•		•													
Beer pasterization - booster		•	•													
Yeast														•	•	•
Beverages																
Clarified juices, drinks, wine	•		•					•		•	•			•	•	
Juice/drinks with pulp/fibres	•	•	•							•	•			•	•	•
Clarified fruit & sugar conc.	•		•					•		•	•			•	•	•
Sugar dissolving	•		•					•		•	•			•	•	•
Final sirup	•	•	•					•		•	•			•	•	•
Other food																
Low viscous products	•		•					•	•	•	•			•	•	
High viscous products	•		•							•	•			•	•	•
Vegetable oil	(•)	•						•	•	(•)	(•)			•	•	
Non evaporating products		•														
Prepared food														•	•	•
Pharma																
High purity water	•					•			•							
WFI						•			•							
CIP return													•			
Parenterals															•	•
Opthalmic															•	•
Ingestibles															•	•
Utilities																
Water	•		•					•	•	•	•	•	•			
CIP feed	•					•		•	•	•	•					
CIP return					•							•	•			
Carbonisation (CO_2)	•	•	•													
Personal Care																
Soap														•	•	•
Cosmetics														•	•	•
General Centrifugal, Liquid Ring and Rotary Lobe Pump range overview																
Flow Range [m^3/h]	500	240	75	275	85	90		85	85	13	30	80	50	48	106	114
Head 50Hz [mlc]	115	78	190	115	73	78		85	85	18	18	52	40			
Head 60Hz [mlc]	158	105	240	158	100	105		120	120	20	27	50	50			
Max. Inlet pressure [bar]	10	16	10/40	40	10	10		4	4	4	4	4	4	8	20	15
Max. Visc [cP]	1000	1000	1000	1000	300	1000		500	500	500	500	300	300	10^6	10^6	10^6
Max. Temp. C	140	140	140	140	140	140		120	120	140	140	140	140	130	200	150

3.1 Centrifugal Pumps

The Centrifugal Pumps from Alfa Laval are your best solution to pump liquids gently and efficiently.

The Premium Pump

LKH Centrifugal Pump

Applications
The LKH pump is a highly efficient and economical centrifugal pump, which meets the requirements of sanitary and gentle product treatment and chemical resistance.

LKH is available in thirteen sizes, LKH-5, -10, -15, -20, -25, -35, -40, -45, -50, -60, -70, -85 and -90.

Standard design
The LKH pump is designed for CIP with emphasis on large internal radii and cleanable seals. The sanitary version of LKH has a stainless steel shroud for protection of the motor, and the complete unit is supported on four adjustable stainless steel legs.

Shaft seals
The LKH pump is equipped with either an external single or a flushed shaft seal. Both have stationary seal rings made from stainless steel AISI 329 with sealing surface in silicon carbide and rotating seal rings in carbon. The secondary seal of the flushed seal is a long lasting lip seal. The pump may also be equipped with a double mechanical shaft seal.

TECHNICAL DATA

Materials
Product wetted steel parts: . . . . . W. 1.4404 (316L).
Other steel parts: . . . . . W. 1.4301 (304).
Finish: . . . . . Semi bright.
Product wetted seals: . . . . . EPDM rubber.

Connections for FSS and DMSS:
6mm tube/Rp 1/8"

Motor sizes
50 Hz: . . . . . 0.75 - 110 kW.
60 Hz: . . . . . 0.9 - 125 kW.

Motor
Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

LKH-90 4 poles = 1500/1800 rpm at 50/60 Hz.

Warranty
Extended 3-years warranty on LKH pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used.

OPERATING DATA

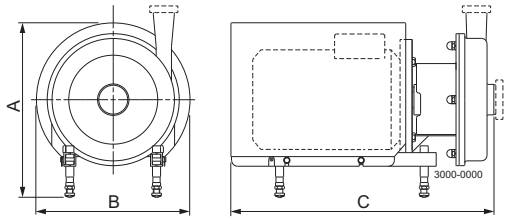
Pressure
Max. inlet pressure:
LKH-5: . . . . . 600 kPa (6 bar)
LKH-10 - 70: . . . . . 1000kPa (10 bar).
LKH-85 - 90: . . . . . 500kPa (5 bar).

Temperature
Temperature range: . . . . . -10°C to +140°C (EPDM).

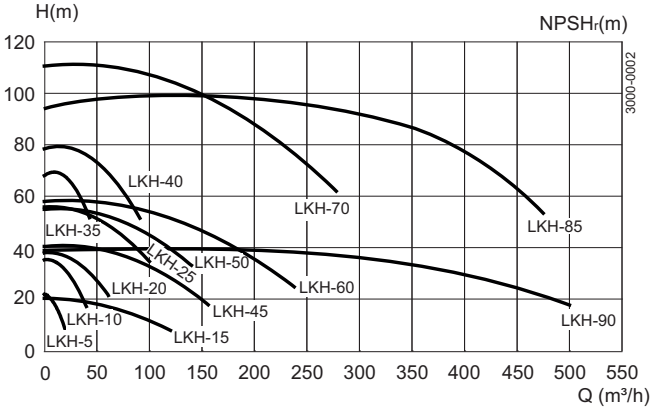
Flushed shaft seal:
Water pressure inlet: . . . . . Max. 1 bar.
Water consumption: . . . . . 0.25 -0.5 l/min.

Double mechanical shaft seal:
Water pressure inlet, LKH-5 to -60: . . . Max. 500 kPa (5 bar).
Water pressure inlet, LKH-70 and -90: . Max. 300 kPa (3 bar).
Water consumption: . . . . . 0.25 -0.5 l/min.

Dimensions mm



Flow chart Frequency: 50 Hz Speed (synchr): 3000 rpm



	LKH-5			LKH-10				LKH-15		
Motor kW	0.75/1.1	1.5	2.2	1.5	2.2	3	4	3	4	5.5
A (Min/Max)	308-400	346-432	346-432	346-432	346-432	357-467	383-496	357-467	383-492	380-513
B	251	288	288	288	288	323	359	323	359	383
C	441	482	482	483	483	538	548	574	584	662

	LKH-20					LKH-25		LKH-35		
Motor kW	1.5	2.2	3	4	5.5/7.5	5.5/7.5	11/15	4	5.5/7.5	11/15
A (Min/Max)	346-432	346-432	357-467	383-496	380-513	380-513	490-607	383-496	380-513	490-607
B	288	288	323	359	383	383	485	359	383	485
C	496	496	550	560	638	644	845	551	629	830

	LKH-40			LKH-45			LKH-50		
Motor kW	7.5	11/15/18.5	22	4	5.5/7.5	11/15	5.5/7.5	11/15/18.5	22
A (Min/Max)	380-513	490-607	546-671	383-496	380-513	490-607	380-513	490-607	546-671
B	383	485	533	359	383	485	383	485	534
C	639	840	905	580	658	859	652	853	917

	LKH-60				LKH-70				
Motor kW	5.5/7.5	11/15/18.5	22	30	5.5/7.5	11/15/18.5	22	30/37/45	55/75
A (Min/Max)	380-513	490-607	546-671	661-786	380-513	490-607	546-671	661-786	811-872
B	383	485	534	673	383	485	534	673	753
C	731	932	996	1084	761	955	1020	1108	1396

	LKH-85			LKH-90	
Motor kW	30/37/45	55/75	90/110	30/37/45	55/75
A (Min/Max)	689-786	811-872	841-902	689-786	811-872
B	673	753	960	673	753
C	1078	1283	1364	1032	1324

Options

A. Impeller with reduced diameter.
B. Impeller screw/nut (standard for LKH-70 - LKH-90).
C. Motor with increased safety/flame proof motor.
D. Inducer (only LKH-10 to -50).
E. Flushed shaft seal.
F. Double mechanical shaft seal.
G. Surface roughness, product wetted parts: $R_a \leq 0.8$ µm.
H. Product wetted seals of Nitrile (NBR), Fluorinated rubber (FPM) or FEP.
I. Rotating seal ring of Silicon Carbide.

Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

Note!

For further details, see also IM 70737.

The premium ex Pump

LKHex Centrifugal Pump

Applications

The LKHex pump is a highly efficient and economical centrifugal pump, which meets the requirements of the ATEX directive 94/9 IEC group II, categories 2 and 3, temperature class T3 and T4. LKHex is available in following sizes, LKHex-10, -15, -20, -25, -35, -40, -45, -50, -60, -70. The LKHex performance data are equal to the performance of LKH pump.

Standard design

The LKHex has a stainless steel shroud for protection of the motor, and the complete unit is supported on four adjustable stainless steel legs.

Shaft seals

The LKH pump is equipped with either a single shaft seal or a double mechanical shaft seal (DMS). The seal ring is in acid-resistant steel AISI 329 with sealing surface in silicon carbide and rotating seal rings in carbon or silicon carbide.

TECHNICAL DATA

Materials

Product wetted steel parts: . . . . . W. 1.4404 (316L).
Other steel parts: . . . . . W. 1.4301 (304).
Finish: . . . . . Semi bright.
Product wetted seals: . . . . . EPDM, NBR, FPM and FEP.

Connections for DMS:

6mm tube/R 1/8" (BSP) external thread.

Motor

Foot-flanged ATEX approved motor according to the IEC metric standard, 2 poles = 3000/3600 rpm. at 50/60 Hz.

Motor sizes

50-60 Hz: . . . . . 1.5 - 75 kW.

OPERATING DATA

Pressure

Max. inlet pressure:
LKHex 10-70: (50Hz) . . . . . 1000kPa (10 bar).
LKHex 10-60: (60Hz) . . . . . 1000kPa (10 bar).
LKHex 70: (60Hz) . . . . . 500kPa (5 bar).

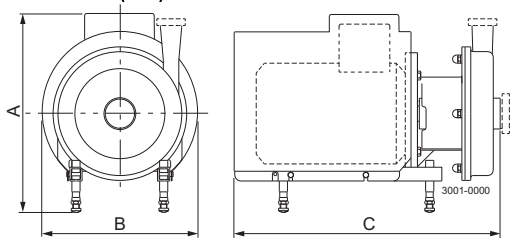
Temperature

Product temperature (T4): . . . .-10°C to +80°C (NBR).
-10°C to +110°C (EPDM, FPM, FEP).
Product temperature (T3): . . . .-10°C to +80°C (NBR).
-10°C to +110°C (EPDM).
-10°C to +140°C (FPM, FEP).
Ambient temperature: . . . . . .-10°C to +30°C

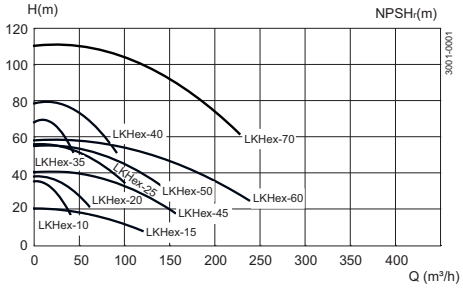
Double mechanical shaft seal (DMS):

Water pressure inlet,
LKH-10 to -70: . . . . . .Max. 500 kPa (5 bar).
Water consumption: . . . . . .0.25 -0.5 l/min.

Dimensions (mm)



Flow chart Frequency 50 Hz, Speed (Synchr): 3000 rpm



Note that most of the dimensions depend on motor supplier and motor size. Non-dependent dimensions are equal to the dimensions for LKH.

	LKH10 Exe				LKH15 Exe		LKH20 Exe					LKH25 Exe		
kW	1.85	2.5	3.3	4.6	3.3	4.6-5.5	1.85	2.5	3.3	4.6-5.5	7.5	4.6-5.5	7.5-12.5	15
A min	358	370	392	432	392	432	358	370	392	432	532	432	532	581
A max	444	480	505	565	505	565	444	480	505	565	649	565	649	618
B	290	325	360	425	360	425	290	325	360	425	510	425	510	553
C	497	546	591	685	627	716	510	558	603	692	853	698	859	908

	LKH35 Exe			LKH40 Exe			LKH45 Exe			LKH50 Exe			
kW	4.6-5.5	7.5-12.5	15	7.5-12.5	15	20	4.6-5.5	7.5-12.5	15	5.5	7.5-12.5	15	20
A min	432	532	549	532	581	661	432	532	581	432	532	581	661
A max	565	649	666	649	686	786	565	649	686	565	649	686	786
B	425	510	553	510	553	673	425	510	553	425	510	553	673
C	683	844	888	854	899	989	712	873	917	706	867	911	1005

	LKH60 Exe				LKH70 Exe				
kW	5.5	7.5-12.5	15	20-24	12.5	15	20-24	36	47-58
A min	432	532	581	661	532	581	661	881	
A max	565	649	686	786	669	686	786	942	
B	425	510	553	673	510	425	673	800	
C NW 150	785	946	990	1084	969	1014	1108	1296	
C 4"	735	896	940	1034	879	924	1018	1206	
C 6"	775	936	980	1074	969	1014	1108	1296	

	LKH10 Exd , Exde			LKH15 Exd , Exde			LKH20 Exd , Exde				LKH25 Exd , Exde		
kW	1.5-2.2	3	4	3	4	5.5	1.5-2.2	3	4	5.5-7.5	4	5.5-7.5	11-15
A min	413	418	438	418	438	483	413	418	438	483	438	483	573
A max	499	528	551	528	551	616	499	528	551	616	551	616	690
B	290	325	360	325	360	425	290	325	360	425	360	425	510
C	497	546	591	546	627	716	510	558	603	692	608	698	537

	LKH35 Exd , Exde			LKH40 Exd , Exde			LKH45 Exd , Exde			LKH50 Exd , Exde		
kW	4	5.5-7.5	11-15	7.5	11-18.5	22	4	5.5-7.5	11-15	5.5-7.5	11-15	22
A min	438	483	573	483	573	625	438	483	573	483	573	625
A max	551	616	690	616	690	730	551	616	690	616	690	730
B	360	425	510	425	510	553	360	425	510	425	510	553
C	594	785	948	693	856	870	623	712	875	706	869	882

	LKH60 Exd , Exde				LKH70 Exd , Exde			
kW	5.5-7.5	11-18.5	22	30	11-18.5	22	30-37	55-75
A min	483	573	625	661	573	625	661	881
A max	616	690	730	786	710	730	786	942
B	425	510	553	673	510	553	673	800
C NW 150	785	948	991	1084	971	1015	1108	1296
C 4"	735	898	941	1034	881	925	1018	1206
C 6"	775	938	981	1074	971	1015	1108	1296

Options

A. Impeller with reduced diameter.
B. Counter flanges, seal rings and bolts for flanged connections (industrial version).
C. Surface roughness, product wetted parts: $R_a \leq 0.8$ µm.
D. Product wetted seals of Nitrile (NBR), Fluorinated rubber (FPM) or FEP.
E. Rotating seal ring of Silicon Carbide.
F. Impeller screw (standard for LKH-70)
G. Double mechanical shaft seal

Note! For further details, see also ESE02224.

Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure, ambient and media temperature.
- Atmosphere ignition temperature.
- Group category and temperature class.
- Density and viscosity of the product.
- Options.

The Compact Pump

LKH-110 and LKH-120/P Multi-Stage Centrifugal Pump

Application

LKH-110 and -120/P are highly efficient and economical multistage centrifugal pumps, which meet the requirements of sanitary and gentle product treatment and chemical resistance. Both the LKH-110 and the LKH-120/P are available in 3 sizes, LKH-112, - 113, -114 and LKH-122/P, -123/P, -124/P respectively, for 2, 3 and 4 stages.

Standard design

The pumps are designed for CIP with emphasis on large internal roundings and cleanable seals. The sanitary versions of LKH-110 and -120/P have stainless steel shrouds for protection of the motor, and the complete unit is supported on four adjustable stainless steel legs.

Shaft seals

The pumps can be fitted with two types of mechanical seals:

- Single internal seal.
- Flushed seal.
- Sic/C material combination, outlet pressure up to 20 bar
- Sic/Sic material combination, outlet pressure up to 40 bar

Both seal types have stationary seal rings of silicon carbide and rotating seal rings of carbon or silicon carbide. The secondary seal of the flushed seal is a long lasting lip seal.

TECHNICAL DATA

Materials

Product wetted steel parts: . . . W. 1.4404 (316L) and Duplex steel
Other steel parts: . . . . . W. 1.4301 (304).
Product wetted seals: . . . . . EPDM.
Other O-rings: . . . . . EPDM.
Finish: . . . . . Semi-bright.

Connctions for FSS:

6mm tube/Rp 1/8"

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm. at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor type, LKH-110:

- Standard motor with a fixed ball bearing on drive side.

Motor types, LKH-110/P and LKH-120/P:

- Special motor with special bearings.

Motor sizes, LKH-110

50 Hz: . . . . . 2.2 - 18.5 kW.
60 Hz: . . . . . 4.6 - 21 kW.

Motor sizes, LKH-120/P

50 Hz: . . . . . 30 - 45 kW.
60 Hz: . . . . . 35 - 87 kW.

OPERATING DATA

Technical data

Max. outlet pressure, LKH-110/P, LKH-120/P:

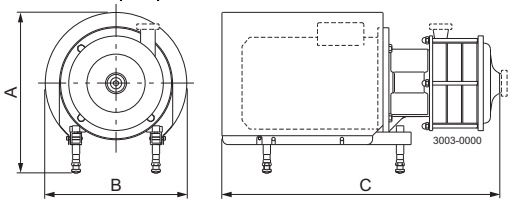
- Limited by the strength of the pump casing: 4000 kPa (40 bar) temperature < 40°C.
- Limited by the strength of the pump casing: 2000 kPa (20 bar) temperature > 40°C.

Temperature range: . . . . . -10°C to +140°C (EPDM).
Water pressure: . . . . . Normally atmospheric, max. 1 bar (flushed seal).
Water consumption: . . . . . 0.25 -0.5 l/min. (flushed seal)
Noise level (at 1 m): . . . . . 60-80 dB (A).

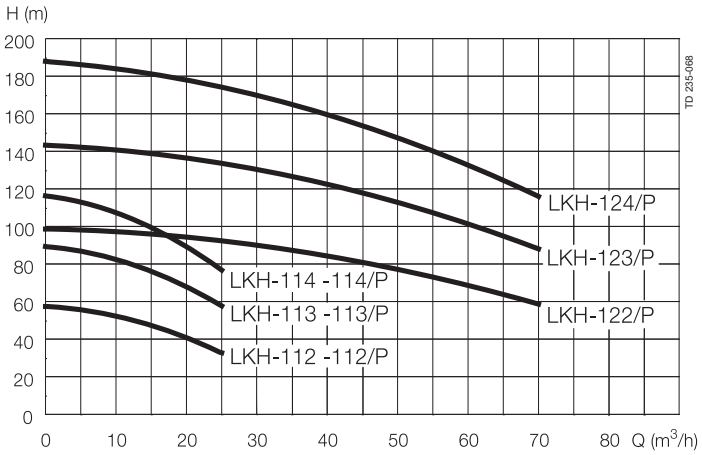
Versions

	LKH-110	LKH-110/P	LKH-120/P
Inlet pressure	<10 bar	>10 bar	-
Motor	Standard	Special	Special
Back Plate	Standard	Reinforced	Standard
Shaft seal	C/SIC or SIC/SIC	SIC/SIC	SIC/SIC or SIC/C

Dimensions (mm)



Flow chart



	LKH-112				LKH-113			LKH-114	
Motor kW	2.2	3	4	5.5	4	5.5/7.5	11	5.5/7.5	11/15
A min.	346	353	378	376	378	376	486	376	486
A max.	432	463	492	509	492	509	603	509	603
B	288	323	359	383	359	383	485	383	485
C	524	579	589	667	631	709	910	750	951

	LKH-122/P	LKH-123/P		LKH-124/P	
Motor kW	30/37/45	30/37/45	55/75	30/37/45	55/75
A min.	661	661	811	661	811
A max.	786	786	872	786	872
B	673	673	753	673	753
C	1088	1146	1397	1202	1453

Options

A. Special motor for inlet pressure higher than 10 bar (only LKH- 110).
B. Motor for other voltage and/or frequency (only LKH-110).
C. Motor with increased safety/flame proof motor.
D. Flushed shaft seal.
E. Impeller with reduced diameter.
F. Counter flanges, seal rings and bolts for flanged connections (industrial version).
G. Product wetted seals of Nitrile (NBR), or Fluorinated rubber (FPM).
H. Rotating seal ring of Silicon Carbide.

Note!

For further details, see also IM 70777.

Ordering

Please state the following when ordering:

- If the inlet pressure is higher than 10 bar it is necessary to order a special version with a modified motor and a stronger backplate. Use the following designation:
  - LKH-110: Inlet pressure (0-10 bar)
  - LKH-110/P: Inlet pressure > 10 bar
- Pump size.
- Version, sanitary or industrial.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

The Rigid Pump

LKHP Filtration Centrifugal Pump for High Inlet Pressure

Application
The LKHPF pump is a highly efficient and economical centrifugal pump, specially designed for high inlet pressures, e.g. for use in filtration systems. The LKHPF pump meets the requirements of sanitary and gentle product treatment and chemical resistance, and is available in nine sizes, LKHPF-10, -20, -25, -35, -40, -45, -50, -60, -70.

Standard Design
The LKHPF pump is designed for CIP-cleaning with an emphasis on large internal radii and easily cleanable seals.
The LKHPF pump is a sanitary pump with a stainless steel shroud for protection of the motor. The complete unit is supported on four adjustable stainless steel legs.

Shaft Seals
The LKHPF pump can be fitted with two types of mechanical seal:
- Single internal seal.
- Flushed seal.

Both seal types have a stationary seal ring and rotating seal ring in silicon carbide.

The secondary seal of the flushed seal is a long lasting lip seal.

TECHNICAL DATA

Materials
Product wetted steel parts: . . . . . W. 1.4404 (316L).
Other steel parts: . . . . . W. 1.4301 (304).
Product wetted seals: . . . . . EPDM rubber.
Finish: . . . . . Semi bright.

Connections for flushed shaft seal:
6 mm tube/Rp 1/8".

Motor Sizes
50 Hz: . . . . . 1.5 - 75.0 kW.
60 Hz: . . . . . 1.75 - 86.0 kW.

Motor
Foot-flanged special motor with a fixed angular contact bearing according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, IP 55 (with drain hole sealed with labyrinth plug), insulation class F.

Warranty
Extended 3-year warranty on LKHPF pumps. The warranty covers all non- wear parts on the condition that genuine Alfa Laval spare parts are used.

OPERATING DATA

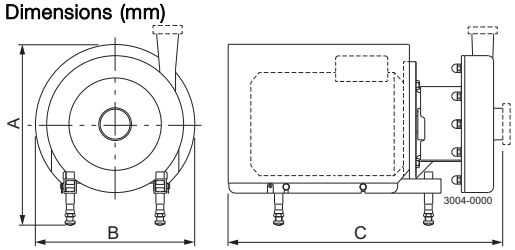
Pressure
Max. inlet pressure: . . . . . 4000 kPa (40 bar).
Water pressure: . . . . . Max. 100 kPa (1 bar).
(Flushed seal)

Temperature
Temperature range: . . . . . -10°C to +140°C (EPDM).

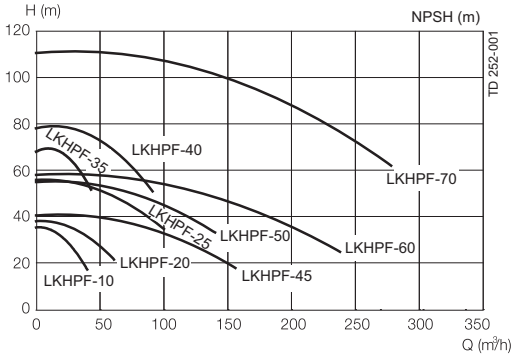
Water consumption
Water consumption: . . . . . Approx. 0.25-0.5 l/min.
(Flushed seal)

Noise
Noise level (at 1 m): . . . . . 60 - 80 dB (A).

Dimensions (mm)



Flow chart



Frequency: 50 Hz, Speed (Synchr.): 3000 rpm

	LKHP-10			LKHP-15		LKHP-20		
Motor kW	1.5	2.2	4	4	5.5	2.2	4	5.5/7.5
A min.	346	346	383	383	380	346	383	380
A max.	432	432	496	492	513	432	496	513
B	288	288	359	359	383	288	359	383
C	494	494	559	590	668	508	573	651

	LKHP-25		LKHP-35			LKHP-40		
Motor kW	5.5/7.5	11/15	4	5.5/7.5	11/15	7.5	11/15/18.5	22
A min.	380	490	383	380	490	380	490	546
A max.	513	607	496	513	607	513	607	671
B	383	485	359	383	383	383	485	533
C	655	856	561	639	840	650	851	915

	LKHP-45			LKHP-50			LKHP-60				LKHP-70		
Motor kW	4	5.5/7.5	11/15	5.5/7.5	11/15/18.5	22	5.5/7.5	11/15/18.5	22	30	22	30/37/45	55/75
A min.	383	380	490	380	490	546	380	490	546	661	671	786	872
A max.	496	513	607	513	607	671	513	607	671	786	383	407	488
B	359	383	485	383	485	534	383	485	534	673	534	673	753
C	588	666	867	664	865	929	666	867	932	1019	935	1035	1323

Options

A. Impeller with reduced diameter.
B. Impeller screw.
C. Motor for other voltage and/or frequency.
D. Flushed shaft seal.
E. Seals in Nitrile (NBR) or Fluorinated rubber (FPM).
F. Surface roughness, product wetted parts: $R_a \leq 0.8 \mu m$

Ordering

Please state the following when ordering:
- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

Note!

- The curves for LKHPF are identical to those for LKH.
- For further details, see also ESE01950.

The Premium Pump for Higher Pressure

LKHI Centrifugal Pump for 16 bar Inlet Pressure

Application

The LKHI pump is a highly efficient and economical centrifugal pump, specially designed for inlet pressures up to 16 bar. LKHI meets the requirements of sanitary and gentle product treatment and chemical resistance, and is available in nine sizes, LKHI-10, -15, -20, -25, -35, -40, -45, -50, -60.

Standard Design

The LKHI pump is designed for CIP-cleaning with emphasis on large internal roundings and easily cleanable seals.

LKHI is a sanitary pump with a stainless steel shroud for protection of the motor. The complete unit is supported on four adjustable stainless steel legs.

Shaft seals

LKHI can be fitted with two types of mechanical seals:

- Single internal seal.
- Flushed seal.

Both seal types have stationary seal rings of silicon carbide and rotating seal rings of carbon or silicon carbide:

1. Silicon carbide/carbon for inlet pressure up to 10 bar.
2. Silicon carbide/silicon carbide for inlet pressure higher than 10 bar.

The secondary seal of the flushed seal is a long lasting lip seal.

TECHNICAL DATA

Materials

Product wetted steel parts: . . . . . W. 1.4404 (316L).
Other steel parts: . . . . . W. 1.4301 (304).
Product wetted seals: . . . . . EPDM.
Other O-rings: . . . . . EPDM.
Finish: . . . . . Semi-bright.

Connections for flushed shaft seal:

6 mm tube/Rp 1/8”

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm. at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor types:

Inlet pressere 0-10 bar: .Standard motor with a fixed ball bearing on drive side.
Inlet pressure 10-16 bar .Special motor with a fixed angular-contact ball bearing on drive side.

Motor sizes

50 Hz: . . . . . 1.5 - 30.0 kW.
60 Hz: . . . . . 1.75 - 35.0 kW

OPERATING DATA

Pressure

Max. inlet pressure: . . . . . 1600 kPa (16 bar).
Water pressure: . . . . . Normally atmospheric. (max. 1 bar).

Temperature

Temperature range: . . . . . -10°C to +140°C (EPDM).

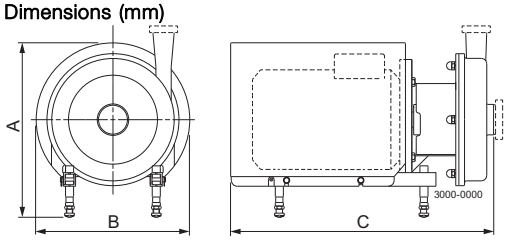
Water consumption

Water consumption: 0.25 -0.5 l/min.
(Flushed seal)

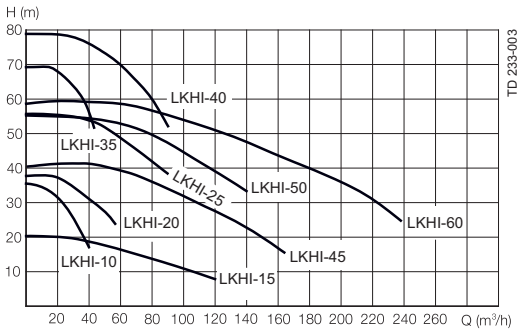
Noise

Noise level (at 1 m): . . . . . 60 - 80 dB (A).

Dimensions (mm)



Volumetric flow



	LKHI-10			LKHI-15				LKHI-20			
Motor kW	1.5	2.2	3	4	3	4	5.5	2.2	3	4	5.5/7.5
A min.	346	346	357	383	357	383	380	346	357	383	380
A max.	432	432	467	496	467	492	513	432	467	496	513
B	288	288	323	359	323	359	383	288	323	359	383
C	483	483	538	548	574	584	662	496	550	560	638

	LKHI-25		LKHI-35			LKHI-40		
Motor kW	5.5/7.5	11/15	4	5.5/7.5	11/15	7.5	11/15/18.5	22
A min.	383	485	383	380	490	383	485	533
A max.	380	490	496	513	607	380	490	546
B	383	485	359	383	485	383	485	533
C	649	850	556	634	835	644	845	910

	LKHI-45			LKHI-50			LKHI-60			
Motor kW	4	5.5/7.5	11/15	5.5/7.5	11/15/18.5	22	5.5/7.5	11/15/18.5	22	30
A min.	383	380	490	380	490	546	380	490	546	661
A max.	496	513	607	513	607	671	513	607	671	786
B	359	383	485	383	485	534	383	485	534	673
C	585	663	864	657	858	922	736	937	1001	1139

Options

A. Impeller with reduced diameter.
B. Impeller screw.
C. Motor for other voltage and/or frequency.
D. 1500 rpm. motor.
E. Motor with increased safety/flame proof motor.
F. Flushed shaft seal.
G. Seals in Nitrile (NBR) or Fluorinated rubber (FPM).
H. Surface roughness, product wetted parts: $R_a \leq 0.8$ µm.
I. Product wetted seals of Nitrile (NBR) or Fluorinated rubber (FPM).
J. Seal faces in SIC/SIC (Silicon Carbide).

Ordering

Please state the following when ordering:

- Pump size.
- Pressure.
- Connections
- Impeller diameter.
- Motor size.
- Single or flushed shaft seal.
- Optional extras.

Note!

- The curves for LKHI are the same as those for LKH.
- For further details, see also Instruction Manual, ESE00700.

DWhen Higher Purity is the Issue

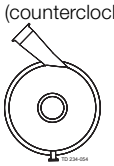
LKH UltraPure Centrifugal Pump

Application

The LKH UltraPure pump is a highly efficient and economical centrifugal pump, which meets the requirements of the pharmaceutical industries. It provides gentle product treatment and is chemically resistant. LKH UltraPure is available in five sizes, LKH UltraPure-10, -20, -25, -35, and -40.

Standard design

As standard the LKH UltraPure is delivered with a 45° outlet (counterclockwise).



45° outlet

The pump is designed for CIP and SIP with emphasis on large internal roundings and cleanable seals.

TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L) with material traceability 3.1 acc. to EN 10204
Other steel parts:	W. 1.4301 (304).
Product wetted seals:	EDPM - USP Class 6.
Finish, product wetted surface:	Bright (Ra 0.5 µm)
Finish, pump casing, external surface:	Bright (Ra 0.8 µm)

Motor

Standard foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm. at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor sizes

50 Hz:	1.5 - 22 kW.
60 Hz:	1.75 - 25 kW.

Warranty

Extended 3-years warranty on the LKH UltraPure Centrifugal Pump range. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used.

OPERATING DATA

Pressure

Max. inlet pressure:	Static: 600 kPa (6 bar).

Temperature

Temperature range:	-10°C to +140°C (EPDM).

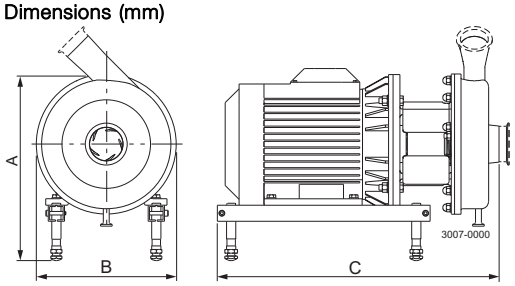
Noise level

Noise level (at 1 m):	60 - 80 dB (A).

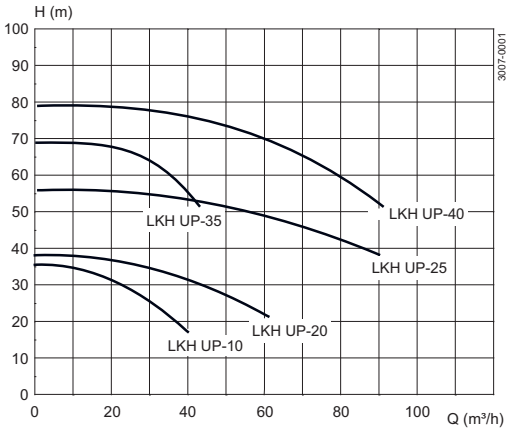
Double mechanical seal

Water pressure:	Max. 500 kPa (5 bar).
Water consumption:	0.25 - 0.5 l/min.

Dimensions (mm)



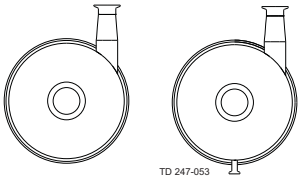
Flow chart



	LKH UltraPure-10				LKH UltraPure-20				LKH UltraPure-25		LKH UltraPure-35			LKH UltraPure-40		
Motor kW	1.5	2.2	3	4	2.2	3	4	5.5/7.5	5.5/7.5	11/15	4	5.5/7.5	11/15	7.5	11/15/18.5	22
A min.	451	365	375	384	365	375	384	402	402	492	384	402	492	402	492	538
A max.	451	451	485	497	451	485	497	535	535	608	497	535	608	535	608	643
B	247	247	250	250	256	256	256	300	303	303	303	303	350	329	350	350
C	404	404	460	467	417	472	479	557	563	675	470	548	660	558	670	709

Options

A. Impeller with reduced diameter.
B. Motor for other voltage and/or frequency.
C. 1500 rpm. motor.
D. Motor with increased safety/explosion proof motor.
E. ATEX approved - See LKH-EX for further information.
F. Inducer.
G. Double mechanical shaft seal.
H. Pump with shroud.
I. Pump without legs.
J. No Drain
K. Product wetted steel parts - ferrite max. 1% or 5%.
L. Surface finish certificate.
M. Finish product wetted surface Ra 0.8 µm
N. Finish product wetted surface Ra 0.5 µm + electropolished
- The final surface value will change after electropolishing.
O. Product wetted seals of FPM or FEP.
P. Special flush arrangement with $^1/_2$" and $^3/_4$" diaphragm valve, needle valve and flow meter.
Q. Hydrostatic testing with certificate
R. Passivation
S. 0° outlet, see drawing below.



No Drain 0º outlet

Standard documentation package:

- 3.1 certificate according to EN10204
- FDA certificate of conformity for product wetted elastomers.
- USP class 6 certificate of conformity - EPDM only
- Pump performance test certificate

Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

Note!

For further details, see also IM 70831.

This product has EHEDG certificate